REMARKS

Response to rejection of Claims 1, 2, and 4 under 35 U.S.C. § 103 based on JP '209 in view of JP '609 and Taguchi

Claims 1, 2, and 4 have been rejected under 35 U.S.C. § 103 has allegedly been unpatentable over JP 10-297209 in view of JP 2001-260609 and Taguchi et al. (U.S. Application Publication No. 2002/0134480) (hereinafter "Taguchi"). Applicant respectfully traverses on the basis that the unexpectedly superior results exhibited by the presently claimed invention render the presently claimed invention patentable.

The present claims recite a heavy duty pneumatic tire comprising a carcass layer, an innerliner layer and an inner face protection layer arranged therebetween, characterized in that the inner face protection layer is comprised of a rubber layer A adjacent to the innerliner layer and a rubber layer B adjacent to the carcass layer. Each rubber composition of the carcass layer and the rubber layer B is compounded with a rubber component, sulfur and a cobalt compound of an organic acid. An amount of sulfur compounded satisfies the following equations (I) and (II):

$$S_A < S_B \leq S_C \quad \cdots\cdots \text{(I)}$$

$$2 \leq S_A \leq 2.5 \quad \cdots\cdots \text{(II)}$$

In the formulae, S_A, S_B and S_C are an amount of sulfur compounded in the rubber composition constituting the rubber layer A, rubber layer B and the carcass layer, respectively, based on 100 parts by mass of the rubber component. In addition, an elongation at break of the rubber composition constituting the rubber layer A is 1.00-1.45 times an elongation at break of the rubber composition constituting the rubber layer B.

Applicant respectfully submits that, as recognized in the Office Action, the presently recited amount of sulfur is not disclosed or suggested by the cited primary reference (JP '209),

and the unexpectedly superior results obtained by the presently claimed invention render the presently claimed invention patentable over the cited art. In particular, JP '209 discloses a tire having a carcass layer (4), a rubber layer A (6a), a rubber layer B (6b) and an innerliner layer (5). However, as recognized in the Office Action, JP '209 fails to teach or suggest that the amount of sulfur compounded in the rubber composition constituting the rubber layer B (6b, corresponding to the rubber layer A in the present invention) is 2-2.5 parts by mass based on 100 parts by mass of the rubber component.

The presently claimed invention exhibits unexpectedly superior results that render it patentable over the cited art. Specifically, the presently claimed invention provides for an unexpectedly high level of adhesiveness between the innerliner layer and the intermediate layer regardless of the level of sulfur content in the innerliner layer. When the intermediate layer (the inner face protection layer) is comprised of the rubber layer A adjacent to the innerliner layer and the rubber layer B adjacent to the carcass layer (as recited in the present claims), and when the amounts of sulfur compounded in the rubber compositions constituting the rubber layer A, the rubber layer B, or the carcass layer satisfy the above-described equations (I) and (II), there exists a high level of adhesiveness between the innerliner layer and the intermediate layer, regardless of the sulfur content in the innerliner layer.

In support of Applicant's contention of unexpectedly superior results, Applicant also attaches herewith a Declaration by Mr. Motoaki Kanou. In his Declaration, Mr. Kanou evaluated the adhesiveness between an innerliner layer and an intermediate layer in a tire which included a carcass layer, an innerliner layer, and an inner face protection layer, as set forth in the present Claim 1. As seen from the Declaration, when the intermediate layer (the inner face protection layer) is comprised of the rubber layer A adjacent to the innerliner layer and the rubber layer B

adjacent to the carcass layer, the adhesiveness between the innerliner layer and the intermediate layer is high, regardless of the sulfur content in the innerliner layer. Further, even when the sulfur content in the innerliner layer is less than 0.5% by mass, the adhesiveness between the innerliner layer and the intermediate layer is high. Applicant respectfully submits that this result cannot be expected in view of the disclosures of JP '209, JP '609 or Taguchi, and that the presently claimed invention is therefore not obvious over those references.

With respect to JP '609 and Taguchi, JP '609 discloses a tire having a carcass ply (6), a medium liner rubber (9) and an innerliner rubber (10). JP '609 teaches 0.5 mass% $\leq S_I < S_M \leq S_p$ where S_I is a sulfur content in the innerliner rubber, S_M is a sulfur content in the medium liner rubber, and S_p is a sulfur content in a coating rubber of the carcass ply. However, JP '609 fails to teach or suggest that the medium liner rubber (9) has two layers. Taguchi discloses a tire having a carcass, an inner liner and a rubber layer disposed between the carcass and the inner liner. However, Taguchi also fails to teach or suggest that the rubber layer disposed between the carcass and the inner liner has two layers. Accordingly, Applicant respectfully submits that these references do not provide a basis for an allegation that the results obtained by the presently claimed invention are not unexpectedly superior.

In view of the above, Applicant submits that the presently claimed invention is not obvious over the cited art, and respectfully requests the reconsideration and withdrawal of this § 103 rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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